

CLAIMS

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1. A method of determining whether to allow or suppress deployment of a vehicular inflatable restraint for a vehicle occupant based at least in part on an output signal of a sensor responsive to occupant weight applied to a vehicle seat,
 - 5 the method comprising the steps of:
 - comparing a filtered version of said output signal to a threshold having a default value corresponding to a predetermined occupant weight under a given set of conditions;
 - determining a value of a parameter that affects a magnitude of said
 - 10 output signal;
 - adjusting said threshold above or below said default value when the determined parameter value is outside a predetermined range of values; and
 - allowing deployment of said restraint when the filtered version of said output signal is above said threshold, and suppressing deployment of said
 - 15 restraint when the filtered version of said output signal is below said threshold.
2. The method of Claim 1, wherein said parameter is a free mass of the vehicle occupant, the method including the steps of:
 - measuring a vertical acceleration of the vehicle;
 - determining a value of said free mass based on a variation of said output
 - 5 signal with respect to a variation of the measured vertical acceleration;
 - adjusting said threshold below said default value when the determined value of said free mass is above a predetermined range of free mass values corresponding to an average weight occupant; and
 - adjusting said threshold above said default value when the determined
 - 10 value of said free mass is below the predetermined range of free mass values.

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3. The method of Claim 2, wherein the step of determining a value of said free mass includes the steps of:

sampling output signal values and computing an average of the sampled values;

5 identifying sampled output signal values that are within a specified percentage of said average;

computing a first variance of the identified output signal values;

computing a second variance of the measured vertical acceleration; and

determining the value of free mass according to a ratio of the first

10 variance and the second variance.

4. The method of Claim 2, including the steps of:

measuring a vehicle run time; and

delaying the step of determining the value of said free mass until the measured run time reaches a predetermined threshold.

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5. The method of Claim 1, wherein said vehicle seat is equipped with a seat belt for restraining said occupant, and said parameter is a tension of said seat belt, the method including the steps of:

measuring the tension of said seat belt; and

5 adjusting said threshold above said default value when the measured tension is above a predetermined normal range.

6. The method of Claim 1, wherein said parameter is a temperature of said vehicle seat, the method including the steps of:

measuring said temperature; and

adjusting said threshold below said default value when the measured temperature is below a predetermined normal range.

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